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TAGS: [ENRG](#) [PGOV](#) [SENV](#) [CA](#)  
SUBJECT: Ontario Looks to Renew Nuclear Power Infrastructure

Ref: 06 Toronto 1703

Sensitive but Unclassified - Please protect accordingly.

11. (SBU) SUMMARY: In preparation for increased electricity demand and the planned closure of all coal-fired generating plants by 2014, the government of Ontario is refurbishing existing nuclear plants and planning for new reactors. Both are necessary to meet the province's nuclear capacity goal of roughly 14,000 megawatts (MW). Nuclear plants currently generate 52% of Ontario's electricity supply mix (reftel), while coal-fired plants generate approximately 20%. Ontario's long-term Integrated Power System Plan (IPSP) calls for the province to acquire 1,400 MW of new nuclear capacity by 2019 with a possible additional 1,400 MW in new nuclear by 2027. Further details regarding the addition of new nuclear reactors in Ontario are expected at the conclusion of the final phase of the competitive Request for Proposal process to select a nuclear reactor vendor. END SUMMARY.

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Ontario's Nuclear Sites  
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12. (U) Ontario has three nuclear power plant sites, with 16 reactor units currently operating. The sites are: Pickering Generation Station A and B (6 operating units); Darlington Generating Station (4 operating units); and Bruce Power A and B (6 operating units). Two other units at Pickering are out of service indefinitely, as Ontario Power Generation (OPG) determined in 2005 that refurbishment was not economically feasible. Ontario's total installed nuclear generation capacity is 14,000 MW.

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Bruce Power Refurbishment  
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13. (U) On October 17, 2005, the Ontario government announced that it had reached an agreement for the refurbishment of Bruce A Units 1 and 2 at the Bruce Power Nuclear facility near Kincardine on Lake Huron, approximately 140 miles from Toronto. The move will produce an additional 1,500 MW of new base-load capacity through 2036.

14. (U) On April 17, 2008, Bruce Power announced that it had completed final cost and schedule estimates for the ongoing Bruce A Units 1 and 2 Restart Project. The project to restart the two units, which have been idle since the mid-1990s, is approximately 60% complete and will cost C\$3.1-C\$3.4 billion upon completion in 2009-2010. Refurbishment work on Bruce A units 3 and 4 is scheduled to commence in late 2009 with an estimated completion date of 2013.

15. (U) Originally, only a limited steam generator replacement of

Bruce A Unit 4 was planned, but in August 2007, the Ontario Power Authority (OPA) announced it would fully refurbish it. The refurbishment will lengthen the operational life of Unit 4 to 2036. The refurbishment will also add 750MW of refurbished nuclear power, increasing the total refurbished nuclear capacity to 3,000 MW. Under the revised plan, Bruce Power expects to invest an additional C\$1 billion. The OPA has assumed the management of all contracts associated with the refurbishment project.

¶6. (U) Separately, the future of the four Bruce B reactor units is uncertain. Under present planning assumptions, those four reactors would need to be refurbished between 2015 and 2020. At this point, Bruce is unwilling to commit to financing the refurbishment. An Infrastructure Ontario-led joint assessment on the refurbishment of Bruce B reactors is ongoing.

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Darlington Refurbishment  
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¶7. (U) In 2008, OPG will also begin work on assessing the potential refurbishment of the Darlington nuclear station, a 4-unit station with a total output of 3,524 MW. Darlington has also been selected by the province as a site for new reactor construction. NOTE: Darlington was selected over a proposed new site at the Bruce complex, "Bruce C". END NOTE.

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OPG's Pickering Nuclear Facilities  
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¶8. (U) Pickering plants A and B have a total of 6

TORONTO 00000194 002 OF 002

reactors. Together these stations have a total output of 3,100 MW, enough to serve a city of one and a half million people. Pickering A began operating in 1971 and continued to operate until 1997, when its operations were voluntarily suspended. In September 2003, one unit was returned to commercial operation and another unit followed in 2005. The remaining 2 units remain out of use. Pickering B's reactors have remained in operation continuously since 1983.

¶9. (U) In June of 2006, OPG detailed its plans for an Environmental Assessment on the potential refurbishment and continued operation of Pickering B to the Canadian Nuclear Safety Commission (CNSC). In 2007, OPG began preliminary studies to determine the viability of extending Pickering B's operating life to 2050-2060. OPG has finished assessing the plant's current condition and is completing the EA and Integrated Safety Reviews (ISR) required for regulatory approval of refurbishment.

¶10. (U) The results of OPG's assessment indicated that no significant negative environmental effects were likely to occur due to the refurbishment and continued operation of Pickering B's facilities. CNSC is now moving to compile its EA Screening Report and hold public consultations and CNSC hearings. The labor intensive EA, ISR, and public consultations have pushed back the decision date on Pickering B's refurbishment until late 2008 or early 2009.

¶11. (SBU) COMMENT: The Ontario government continues to explore alternative power generation options in order to ensure the reliability of the Ontario electric supply. Despite the Ontario government's emphasis on conservation, projections of future electricity demand continue to rise. The political decision to close all coal-fired plants could carry risks for the reliability of Ontario's electricity supply if suitable replacement sources are not found or are delayed. The interconnected nature of the U.S. and Canadian electric grids highlights the importance to the United States of electricity reliability in Ontario. END COMMENT.  
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